Quick User Manual

SG8KTL-EC/SG10KTL-EC/ SG12KTL-EC

PV Grid-Connected Inverter

SG8K_10K_12KTL-EC-QUEN-Ver13-201409 Version: 1.3

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Notice

The contents of the manual will be periodically updated or revised due to the product development. Specifications are subject to changes without advance notice!

The latest manual can be acquired via www.sungrowpower.com.

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About this manual

This quick user manual provides a general instruction required for installing, wiring, commissioning and operating the SG8KTL-EC, SG10KTL-EC and SG12KTL-EC inverters.

SG8KTL-EC, SG10KTL-EC and SG12KTL-EC will be referred to as inverter hereinafter unless specified otherwise.

For further instructions on installing or operating, please refer to the detailed user manual which you can require on the package CD or via www.sungrowpower.com.

To prevent personal injury or material damage, the inverter must only be installed, operated, maintained and serviced by **qualified personnel**:

- They must be trained specially;
- They have already read over and understood the manual and other related documents;
- They have been familiar with safety requirements for electrical system and local safety-related guidelines.

The contents of the manual will be periodically updated or revised due to the product development. Specifications are subject to changes without advance notice!

The latest manual can be acquired via www.sungrowpower.com.

NOTICE

- **In no case shall this quick user manual substitute for the user manual or related notes on the devices.**
- **Any violation could result in personal death or injury or device damage.**

Keep this manual in a convenient place for future reference.

Contents

About this manual II

1 Safety Instructions 1

1.1 Symbols Explanation 1

1.2 Symbols on the Inverter Body 2

1.3 Important Safety Instructions 2

2 Product Introduction 6

2.1 Inverter Appearance 7

2.2 Unpacking and Inspecting 8

3 Mechanical Installation 9

3.1 Select an Optimal Installation Position 9

3.2 Installation 11

4 Electrical Connection 12

4.1 Cables Selection 12

4.2 AC Connection 13

4.3 DC Connection 15

4.3.1 PV Mode Configuration 15

4.3.2 DC Cables Connection 16

4.4 Second Protective Earth Terminal 17

4.4.1 Second PE Terminal 17

4.4.2 Second PE Connection 17

4.5 Communication Connection 18

4.5.1 Interfaces Overview 18

4.5.2 RS485 Communication Connection 18

4.5.3 Ethernet Communication Connection 19

4.5.4 Power Control Configuration 20

5 Commissioning 23

5.1 Description of Button Function 23
5.2 Commissioning Procedure 23
6 Viewing PV Plant Information 26
6.1 SolarInfo Bank Connection 26
6.2 Registration and Adding PV Plant 27
7 Appendix 32

1 Safety Instructions

1.1 Symbols Explanation

Important instructions contained in this manual should be followed during installation, operation and maintenance of the inverter. And they will be highlighted by the following symbols.

DANGER

DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE indicates a situation which, if not avoided, could result in equipment or property damage.

NOTE indicates additional information, emphasized contents or tips to help you solve problems or save time.

1.2 Symbols on the Inverter Body

	Disconnect the inverter from mains and PV generator before service!
	Do not touch any inner live parts until 10 minutes after disconnection from the utility grid and the PV input.
	Hot surface! In order to reduce the risk of burns, do not touch the hot surface when the device is running.
	Look over the user manual before any operation on the inverter!
	The installation and service of the inverter unit can only be performed by qualified personnel.

1.3 Important Safety Instructions

The inverter has been designed and tested strictly according to the international safety regulations. As electrical and electronic equipment, safety instructions related to them must be complied with during installation, operation and maintenance.

The following safety instructions must be read and kept in mind prior to any work.

Before Installation

⚠ CAUTION

There is a risk of injury due to improperly handling the device!

- **Always follow the instructions contained in the manual when moving and positioning the inverter.**
- **The weight of the device can cause injuries, serious wounds, or bruise if improperly handled.**

During Installation

DANGER

Prior to installing the inverter onto the wall, it is crucial to make certain that the inverter is not electrically connected.

CAUTION

System performance loss due to bad ventilation!

The device requires good quality ventilation during operation. It is essential to keep the unit upright and nothing covering the heat sink in order to ensure that the device interior is well cooled down.

During Electrical Connection

DANGER

PV arrays will produce electrical energy when exposed to sunlight and thus can create an electrical shock hazard.

- **Wiring of the PV arrays should be performed only by qualified personnel.**
- **PV modules should be covered by opaque materials during wiring.**

NOTICE

All electrical connections must be in accordance with local and national standards.

Only with the permission of the local energy sector, the inverter can be connected into the utility grid.

WARNING

All cables must be firmly attached, undamaged, properly insulated and adequately dimensioned.

During Inverter Operation

Do not open the enclosure when the inverter is under voltage. There is an unlikely but possible risk of explosion in very specific cases of malfunction. The enclosure will protect persons and property from such an explosion, only if it is correctly sealed.

⚠ DANGER

There is a risk of inverter damage or personal injury!

DO NOT disconnect DC connectors while the inverter is under AC load! First de-energize the device from dual power sources and then verify that there is no voltage present.

⚠ CAUTION

There is a risk of burn!

DO NOT touch the device hot parts (such as heat sink) during operation. Only LCD display panel and DC switch can be touched during inverter operation.

Maintenance and Service

⚠ DANGER

Before any service work, you should obey the following procedures.

- **Disconnect inverter from the utility grid first and then PV arrays;**
- **Wait at least 10 minutes until the inner capacitors discharge completely;**
- **Verify that no voltage or current is present with appropriate testing device.**

⚠ CAUTION

Keep non-related persons away!

A temporary warning sign and barrier must be posted to keep non-related persons away in any period while performing electrical connection and service work.

NOTICE

- **Any malfunction that may impair the inverter safety functions must be repaired immediately before the inverter is restarted.**
- **Inverter contains no owner serviceable parts inside. Please contact local authorized personnel if any service work is required.**

Servicing of the device in accordance with the manual should never be undertaken in the absence of proper tools, test equipments or more recent revision of the manual which is clearly and thoroughly understood.

NOTICE

There is a risk of inverter damage if it is improperly serviced.

Use only accessories and spare parts approved by the inverter manufacturer. Never modify the inverter or its components. Otherwise it will cause loss of any or all warranty rights.

Others

NOTICE

The selected country settings can be changed only by qualified personnel!

Unauthorized modification to country settings should be prohibited. Alternation of the country settings may cause a breach of the type-certificate marking.

WARNING

All safety instructions, warning labels and nameplate on the inverter body:

- **Must be clearly visible;**
- **Must not be removed, covered and pasted.**

2 Product Introduction

The inverters, which are 3-phase string inverters without transformer, are crucial units between the PV strings and utility grid in the small-scaled PV power system. The intended usage of the inverter is illustrated in Fig.2-1.

NOTICE

Any other or additional usage is not permitted except the intended usage.

Where the positive or negative terminal of PV strings needs to be grounded, inverter cannot be connected to PV modules.

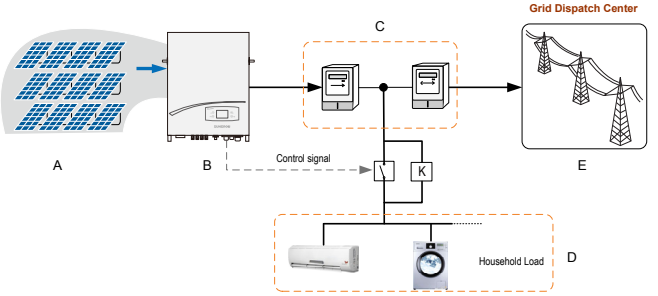


Fig. 2-1 Inverter Application in the PV Power System

Item	Description	Remark
A	PV strings	Monocrystalline silicon, polycrystalline silicon, and thin-film of protection class II without grounding
B	Inverter	SG8KTL-EC, SG10KTL-EC and SG12KTL-EC
C	Metering device	Meter cupboard with power distribution system
D	Household load	Household appliances
E	Utility grid	TT, TN-C, TN-S, TN-C-S

2.1 Inverter Appearance

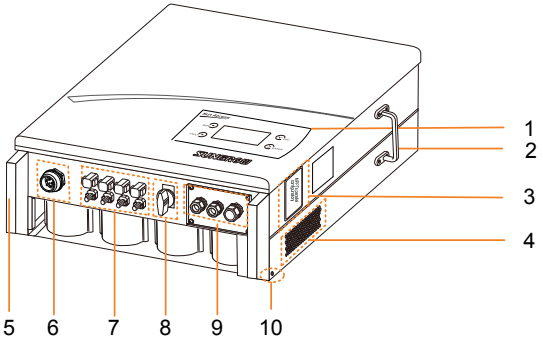
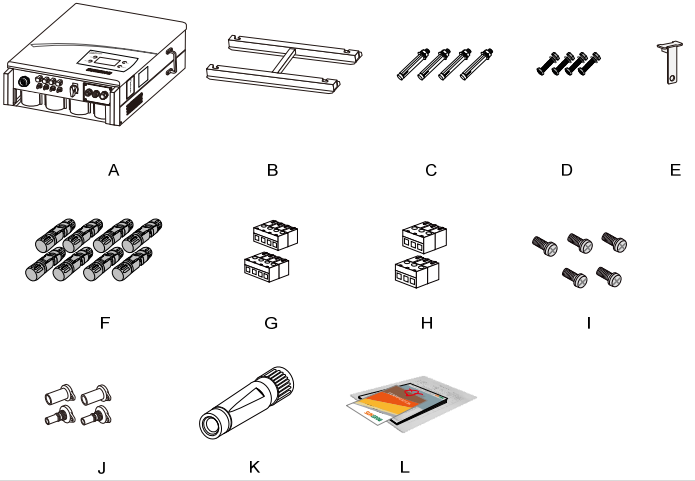


Fig. 2-2 Inverter Appearance

No.	Name	Description
1	LCD display panel	Human-computer interaction interface for looking up running information and configuring parameters.
2	Side grips	The side grips are designed for holding the unit when mounting, moving or servicing the inverter.
3	PV input parallel lid (**SG12KTL-EC**)	There are two parallel blocks for PV input mode configuration under the lid.
4	Ventilation holes	To ensure sufficient heat dissipation.
5	Handles	The handles are designed for transporting, installing and dismantling the inverter.
6	AC connection terminal	Inverter feeds power to utility grid via this terminal.
7	DC terminals	There are four pairs of DC terminals for PV inputting on the bottom of the inverter.
8	DC switch	During normal operation it is in "ON" state. It can shut down the inverter immediately in "OFF" position.
9	Communication connection terminals	They are RS485 communication ports, Ethernet communication ports and DI/DO ports.
10	Second PE terminal	As specified in EN 50178.

2.2 Unpacking and Inspecting

1. Unpack the carton and take out all the accessories.
2. Inspect the inverter for visible damages and check the completeness of the delivery contents according to the inner packing list.
3. Contact your supplier if the delivery is incomplete or damaged. The inverter is unavailable if any damage is detected.

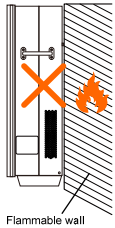


Item	Description
A	Inverter.
B	Wall bracket used to mount inverter onto the wall.
C	Expansion bolts for fastening wall bracket onto concrete wall.
D	Fastener set for installing wall bracket onto metal frame.
E	Theft-proof device used to lock the inverter to the wall bracket.
F	PV input connectors, including positive and negative connectors.
G	Four-pole plugs for DI connection.
H	Three-pole plugs for DO connection.
I	Five M4 screws for second PE connection and spare.
J	Two pairs. Seal the unplugged PV connectors with sealing caps.
K	AC connector.
L	Related documents, including quality certificates, quick user manual, CD, packing list and product test reports.

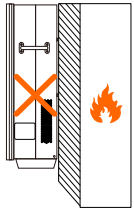
3 Mechanical Installation

3.1 Select an Optimal Installation Position

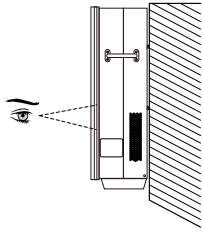
- The inverter must be mounted in a vertical site.
- This requires a firm wall or metal frame.



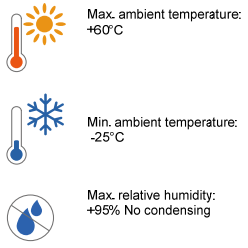
- Mount the inverter at an appropriate site without flammable material and flammable gas nearby.



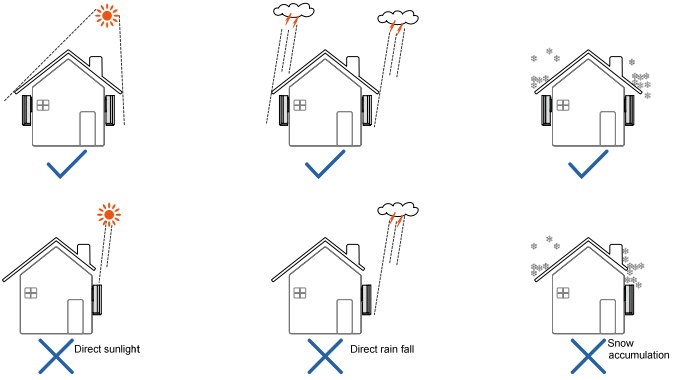
- Install the inverter vertically with upside up at eye level for easily buttons operation and display reading.



- The inverter unit with IP65 can be installed indoors or outdoors where the ambient temperature and relative humidity meet the requirements.



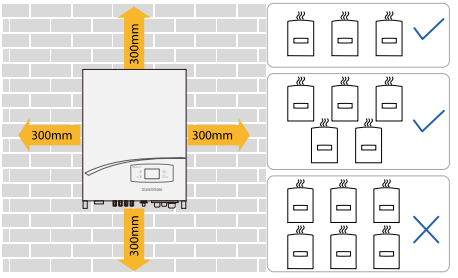
- Avoid exposing the inverter to direct sunlight or rain or snow! Shaded site of the building would be better.



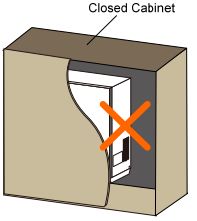
- Take enough space for convection into consideration during installing multiple inverters. It is suggested to position the multiple inverters in a staggered way if necessary.

⚠ CAUTION

The device requires good quality ventilation during operation. System performance loss due to bad ventilation!



- Do not install the inverter in a enclosed cabinet.



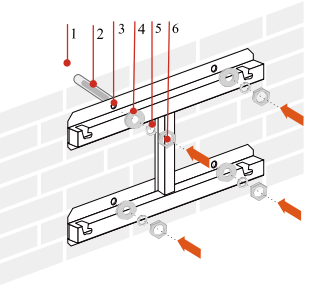
3.2 Installation

1. Move the inverter to the installation site with the help of another person or the lifting device by means of the side grips.

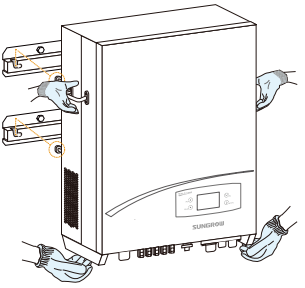
NOTICE

Always keep in mind the weight of the inverter! The Installers should wear gloves to avoid scratches when moving and mounting the inverter.

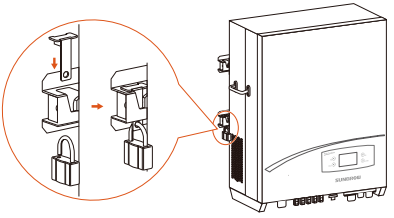
2. Fix the backplate on the wall with appropriate fixing sets.



3. Mount the inverter onto the backplate and secure it with a M6×16 theft-proof screw.



4. To protect the inverter from theft, you can lock it to the wall bracket with a theft-proof device and a padlock.



4 Electrical Connection

DANGER

Death hazards due to high voltage inside the inverter!

Make sure that all the DC and AC cables to the inverter are not live before the electrical work.

Do not turn on the AC or DC circuit breaker until all inverter electrical connections have completed.

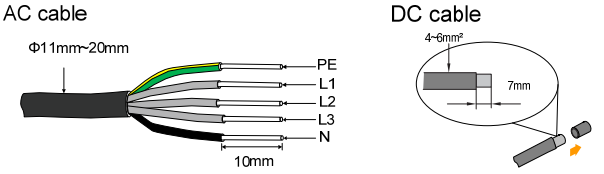
DANGER

Do not open the enclosure when the inverter is under voltage.

There is a risk of inverter damage or personal injury!

4.1 Cables Selection

Cable Type	Single Conductor size	Recommended conductor size
AC cable	4…10 mm^2(AWG11…AWG7)	---
DC cables	4…6 mm^2(AWG11…AWG9)	---
Second PE Cable	---	6 mm^2
Comm. cables	Shielded network cable	---
	DI connection cable	5 cores cable(5×0.94 mm^2)
	DO connection cable	4 cores cable(4×2.5 mm^2)



4.2 AC Connection

AC Circuit Breaker

An independent three or four-pole circuit breaker for the inverter must be installed at the output side to ensure that the inverter can be securely disconnected under load.

Inverter Type	Specification for AC Circuit Breaker
SG8KTL-EC	30A
SG10KTL-EC	30A
SG12KTL-EC	32A

NOTICE

- **It is not allowed for several inverters to use the same circuit breaker.**
- **It is not allowed to connect loads between inverter and circuit breaker.**

Connecting Inverter to AC Grid

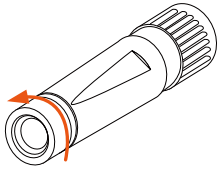
DANGER

Danger to human life due to high voltage inside the inverter!

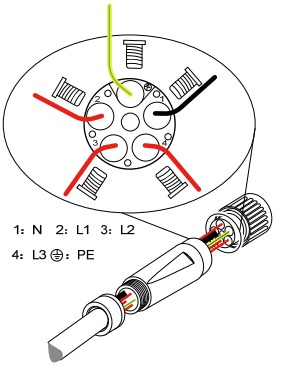
Make sure that all the DC and AC cables to the inverter are not live before the electrical work.

Do not turn on the AC circuit breaker until all inverter electrical connections have completed.

1. Unscrew the water-proof terminal in the following direction.



2. Insert appropriate size AC cables into the water-proof terminal.
3. Strip off insulation layer of all AC cables. The length of strip insulation is approximately 10 mm.
4. Fix all cables ends to the corresponding terminals with the torque of 1 N·m according to markings on the connector, especially "PE" cable. If a phase wire is connected to the "PE" terminal, it may permanently destroy the inverter.



5. Pull cables outwards to confirm whether they are installed firmly.
6. Combine the two front-end parts together with the torque of 2 N·m.
7. Tighten the water-proof terminal with the torque of 5 N·m in opposite direction.
8. Make sure the AC and DC circuit breakers are disconnected.
9. Connect phase cables and "N" cable to AC circuit breaker.
   - Plug AC connector to corresponding AC terminal.
   - Screw AC cables except the "PE" cable to the AC circuit breaker.
10. Connect AC circuit breaker to utility grid.
11. Make sure all AC cables are firmly installed.

4.3 DC Connection

4.3.1 PV Mode Configuration

The two PV inputs can be configured in independent mode or parallel mode. Refer to the user manual for an appropriate mode selection.

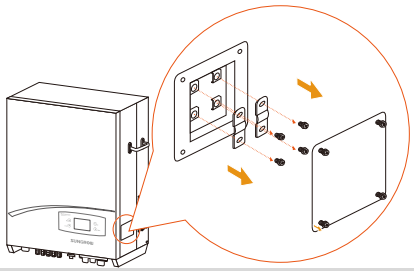
NOTICE

In independent mode, when there is only one PV input, the other input may produce induced voltage. DO NOT touch the unused DC terminals.

Independent Mode

For independent mode, the two PV inputs work independently, each with its own MPPT. Therefore the two PV inputs can be different from each other in PV module types, numbers of PV panels in PV string, tilt angles and orientation angles of PV modules.

SG12KTL-EC is set in parallel mode by default. If you want to configure it to independent mode, please remove copper bars between the two terminal blocks and tighten the PV input parallel lid back to the inverter.



Keep the copper bars in a convenient place for future use.

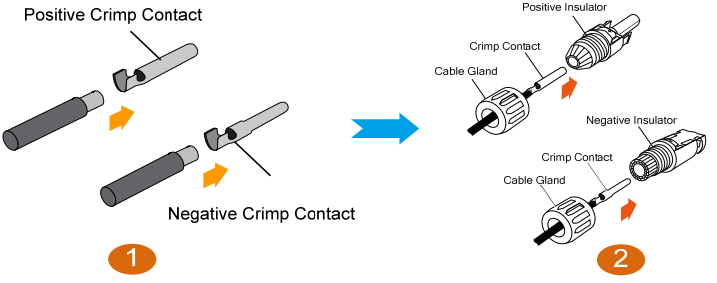
Parallel Mode

For parallel mode, all PV strings with the same type, the same number, identical tilt and identical orientation in series can be connected to each single input area. Two trackers are configured in parallel by Y-type cable connector terminal to handle power and/or current levels higher than those a single tracker can handle.

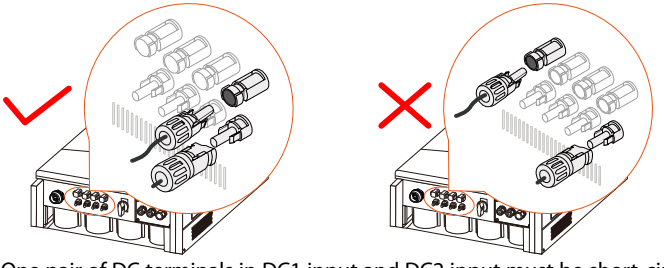
For SG8KTL-EC and SG10KTL-EC, the default configuration mode of the LCD screen is independent mode. If you want to configure it to parallel mode, please refer "**5.2 Commissioning Procedure**" to modify the configuration mode.

4.3.2 DC Cables Connection

1. Assemble the DC plug-in connectors and connect them to the bottom terminals.



2. Check the polarity of the PV input before PV input connection.
3. Plug the positive and negative DC connectors into PV terminals underneath the connection cabinet until there is an audible sound.



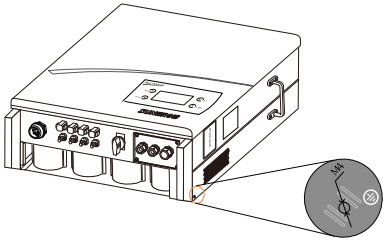
4. One pair of DC terminals in DC1 input and DC2 input must be short-circuited by Y-type cable connector terminal. **(For SG8KTL-EC and SG10KTL-EC)**
5. Seal the unused DC terminals with the terminal caps.

4.4 Second Protective Earth Terminal

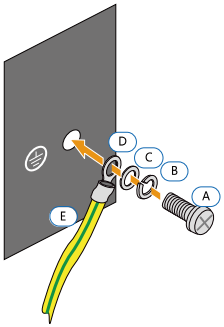
The inverter is equipped with second protective earth terminal as specified in EN 50178.

4.4.1 Second PE Terminal

There is a second PE terminal on the right side of the inverter. You may choose to connect PE connection.



4.4.2 Second PE Connection



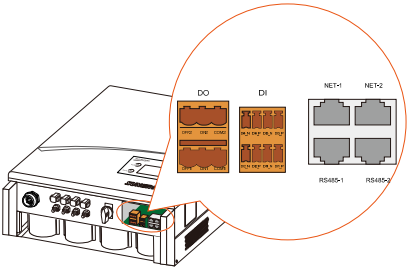
Item	Description	Specification
A	Screw	M4
B	Spring washer	-
C	Washer	-
D	Cable socket	-
E	Yellow-green cable	6-10 mm^2 copper wire or 10-16 mm^2 aluminum wire

*The connection parts are not included in the delivery scope.

4.5 Communication Connection

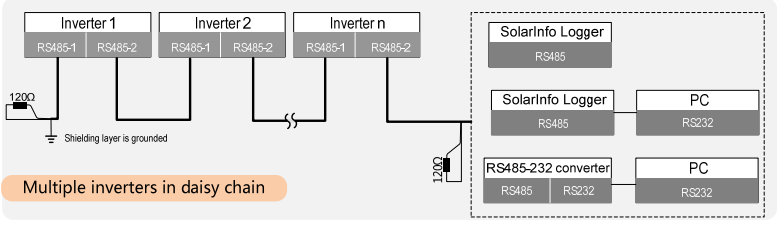
4.5.1 Interfaces Overview

All communication terminals are located on the bottom of the inverter.

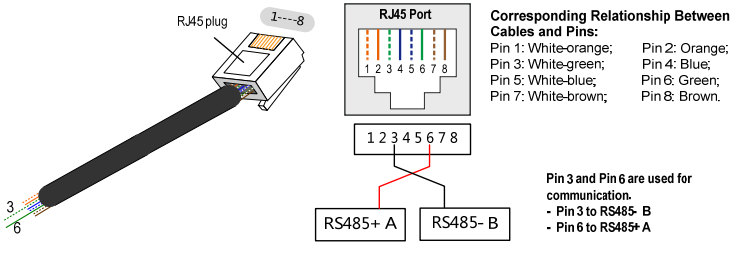


4.5.2 RS485 Communication Connection

Where there is more than one inverter, all inverters can be connected in a "daisy chain". The very first and last inverters in the chain must be terminated with a resistor of 120 Ω. The shielding layer of network cable should be single-point grounded.



For RJ45 Connection the pins definitions are shown below:



4.5.3 Ethernet Communication Connection

The Ethernet communication can be connected either in single, daisy chain or star topology.

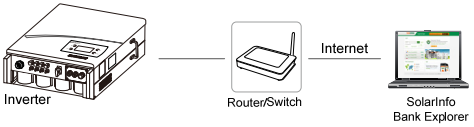


Fig. 4-1 Single inverter network connection

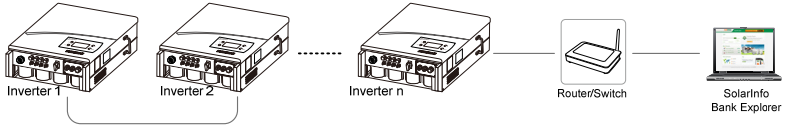


Fig. 4-2 Inverters network connection in daisy chain topology

The network communication of the daisy chain is done via the inverter in-built switching chip. Therefore, when the inverter is damaged or enters the low power consumption status, the switching chip cannot work normally and the daisy chain communication will be interrupted.

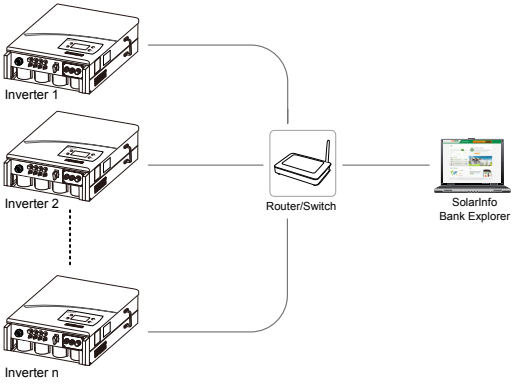


Fig. 4-3 Inverters network connection in star topology

The star topology network connection is recommended for optimal operation.

The maximum number of inverters connected depends on switch, router and other factors. Please refer to switch's or router's manual to obtain the limit.

The Network cable should be less than 100 m.

4.5.4 Power Control Configuration

There are two terminals located on the bottom of the inverter for power control configuration: DI and DO.

Power Control Settings

The inputs of DI can be used to connect a ripple control receiver for active power control.

The inverter then can be linked via Ethernet/RS485 so that the inverter connected to the ripple control receiver can transmit the information received to the other inverters.

In the Ethernet communication connection, only one inverter can be set as master inverter, others shall be set as slave inverters.

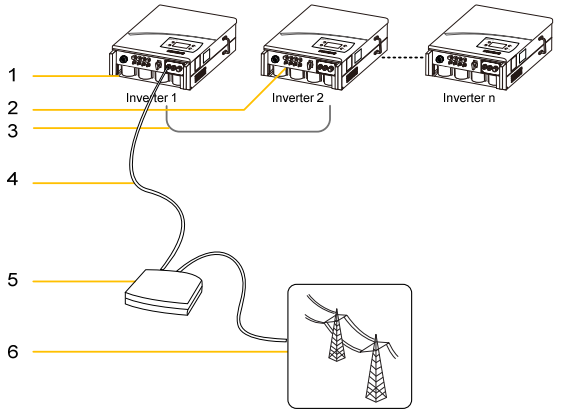


Fig. 4-4 Connecting the ripple control receiver for inverters with RS485 connections

Item	Description
1	Master inverter
2	Slave inverter
3	RS485 connection
4	5-conductor connection at digital input
5	Ripple control receiver
6	Grid

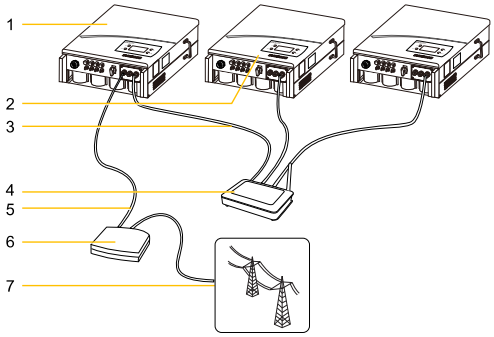
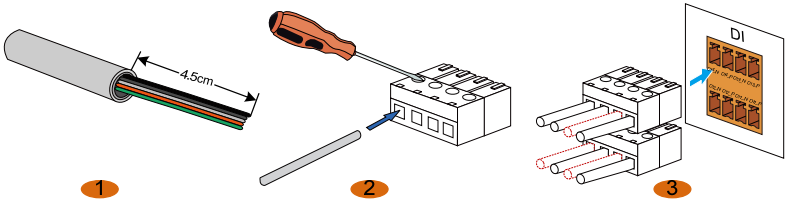


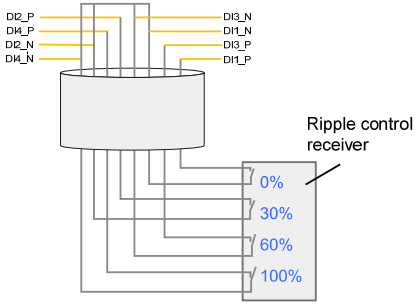
Fig. 4-5 Connecting the ripple control receiver for inverters with Ethernet connections

Item	Description
1	Master inverter
2	Slave inverter
3	Ethernet cable
4	Router
5	5-conductor connection at digital input
6	Ripple control receiver
7	Grid

Connect the cables to DI terminal block according to the terminal assignment:



Connect the ripple control receiver to the inverter.



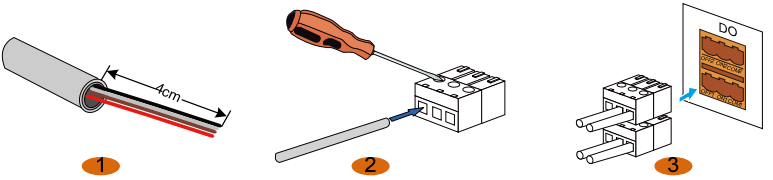
Multi-function Relay Configuration

The inverter has a multi-function DO relay, whose switching can be configured.

For example, the DO terminal can be configured with the following functions:

- DO1: Alarm output
- DO2: Consumer load control

Connect the cables to DO terminal block according to the terminal assignment:



The relay can be configured as NO (by connecting COM and OFF) or NC (by connecting COM and ON) contact.

NOTICE

You must install an external load relay between the inverter and the consumer load. Do not connect any consumer load directly to the switch output.

5 Commissioning

Before starting the inverter, make sure all installation and connections are completed and verified.

5.1 Description of Button Function

Inverter offers two buttons for the user to look up the running information and configure parameters settings. The two buttons have multiple functions. Please refer to Tab. 5-1before any operation onto inverter.

Tab. 5-1 Button Function

Button	Operation	Description
	Press less than one second	Move upwards or downwards, or increase setting value. Hereafter, it is referred to as "Press ▼".
	Press more than one second	Return to the previous menu or cancel the command. Hereafter, it is referred to as "Press **ESC**".
	Press less than one second	Move left or right, or turn pages. Hereafter, it is referred to as "Press ➤".
	Press more than one second	Enter into the sub-screen or confirm the command. Hereafter, it is referred to as "Press **ENTER**".

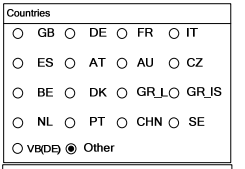
5.2 Commissioning Procedure

1. Connect the external AC circuit breaker.
2. Rotate DC switch to the "ON" position.
3. Supposed that there is sufficient sunlight and DC power, the inverter begins to initialize and the LCD is activated to setup the interface. Press buttons to configure initial inverter parameters.

NOTICE

Only qualified personnel are allowed to adjust or set parameters related to system protection functions.

4. Perform country settings with the right two buttons. Confirm the settings by **Pressing** **ENTER**.

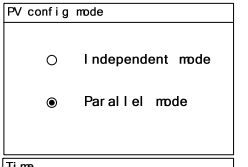


5. Configure the protective parameters settings.

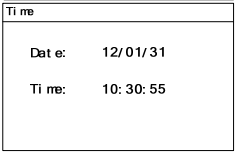
Single-stage protection: There is only one protection threshold range for each grid voltage protection parameter.

Multi-stage protection: The protection parameters for each grid voltage protection can be set with two threshold ranges.

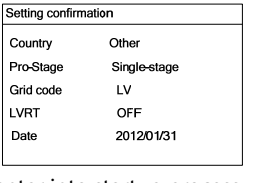
6. Set PV configure mode on LCD according to the actual PV string configuration.



7. Configure time according to the local time. The date format is **YY/MM/DD**. **YY, MM**, and **DD** stand for year, month, and day respectively. The time format is **hh/mm/ss**. **hh**, **mm**, and **ss** stand for hour, minute, and second respectively.

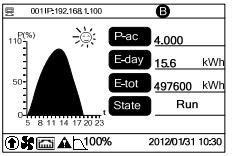


8. After configuring all parameters, there will be a "setting confirmation" screen. Check whether all above-mentioned parameters are correct. Confirm by **Pressing** **ENTER**. Cancel by **Pressing** **ESC** and reset.



When the initial configuration is completed, inverter will enter into startup process. Observe the status of LED indicators and the LCD main screen. If inverter's commissioning succeeds, the "RUN" indicator will be lit and "RUN" will be displayed on the "State" area.

9. If inverter's commissioning fails, the "FAULT" indicator will be lit and "FAULT" will occur on the display. Press ▼ to view "current fault" information. Refer to the user manual for troubleshooting. Repeat the above procedures for inverter commissioning.

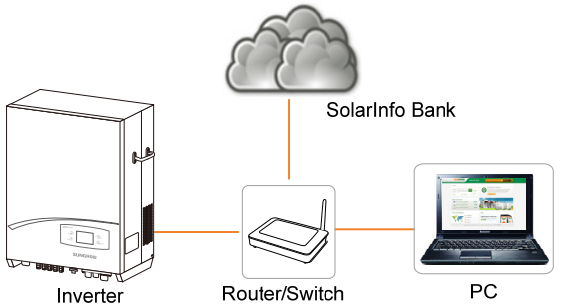


6 Viewing PV Plant Information

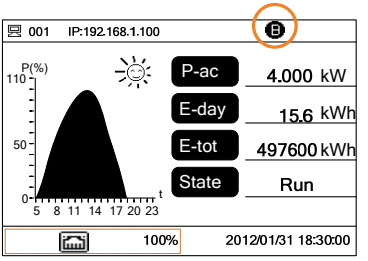
After registering on the webpage www.solarinfobank.com, user can view PV plant information through the computer or smartphone. User can also view PV plant information through the APP of SolarInfo Bank installed into the smartphone.

6.1 SolarInfo Bank Connection

1. Connect the communication cable between router and inverter, and connect the communication cable between router and PC.

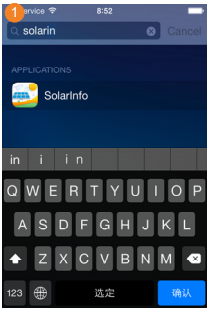


2. Wait for about 10 minutes and the icon as shown in the figure below will appear on the main LCD display interface. The SolarInfo Bank connects to the inverter successfully.

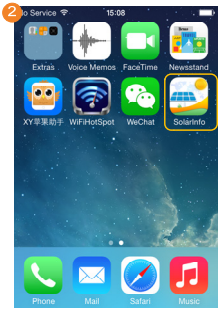


3. Open the explorer, input the webpage www.solarinfobank.com in the address bar. Register and then visit SolarInfo Bank. For details, see "**6.2 Registration and Adding PV Plant**".

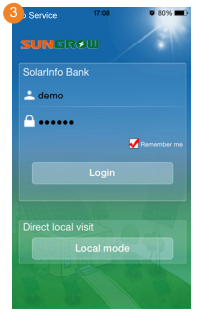
4. Search for SolarInfo Bank, download and install the APP into your smartphone. Open the APP and log in, and then you can view the plant information through the APP of SolarInfo Bank.



Search for SolarInfo Bank and install



Open SolarInfo Bank



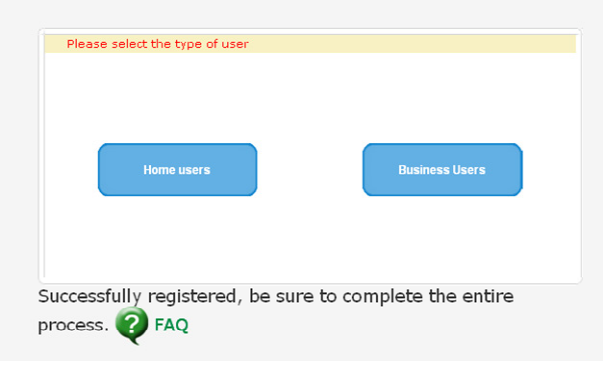
Input name and password to login

The APP of SolarInfo Bank cannot be visited by "Local Mode".

6.2 Registration and Adding PV Plant

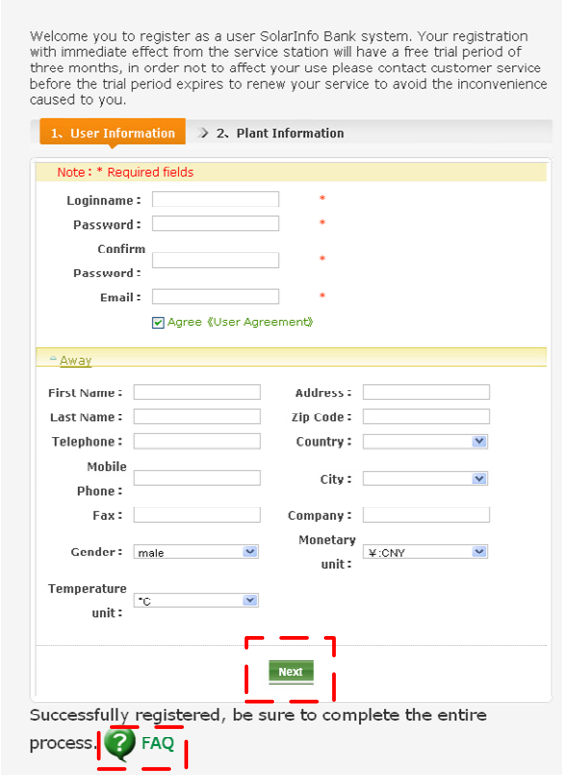
1. Open a browser and enter the URL www.solarinfobank.com to view the homepage of SolarInfo Bank. Register a new user by clicking "Register".

2. The registration interface as shown below will appear .User can select Home user or Business user according to real situation. Select Home user for residential use. Select Business user for commercial use.

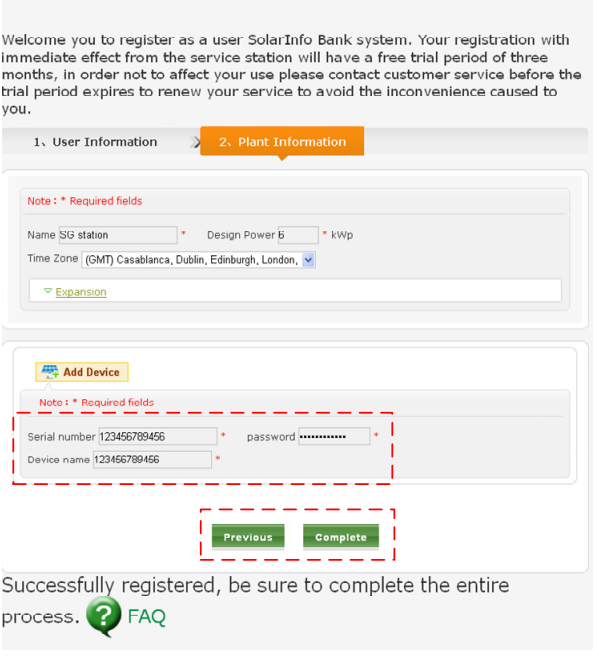

Please select the type of user
Home users
Business Users
Successfully registered, be sure to complete the entire process.
FAQ

3. Fill in user information as shown in the following figure and click Next.

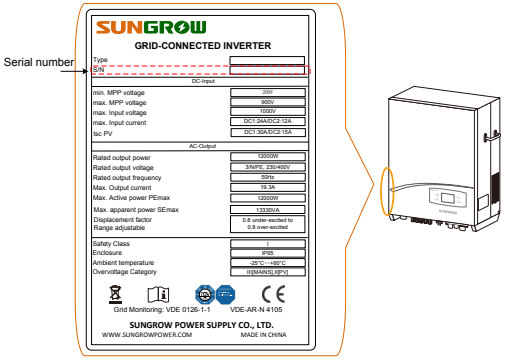
The Country, City, Monetary unit and Temperature unit can be selected from the drop-down list. For other items, user must fill in manually.


Welcome you to register as a user SolarInfo Bank system. Your registration with immediate effect from the service station will have a free trial period of three months, in order not to affect your use please contact customer service before the trial period expires to renew your service to avoid the inconvenience caused to you.
1、User Information
2、Plant Information
Note：* Required fields
Loginname：
Password：
Confirm Password：
Email：
Agree《User Agreement》
Away
First Name：
Last Name：
Telephone：
Mobile Phone：
Fax：
Gender：
male
Address：
Zip Code：
Country：
City：
Company：
Monetary unit：
¥:CNY
Temperature unit：
°C
Next
Successfully registered, be sure to complete the entire process.
FAQ

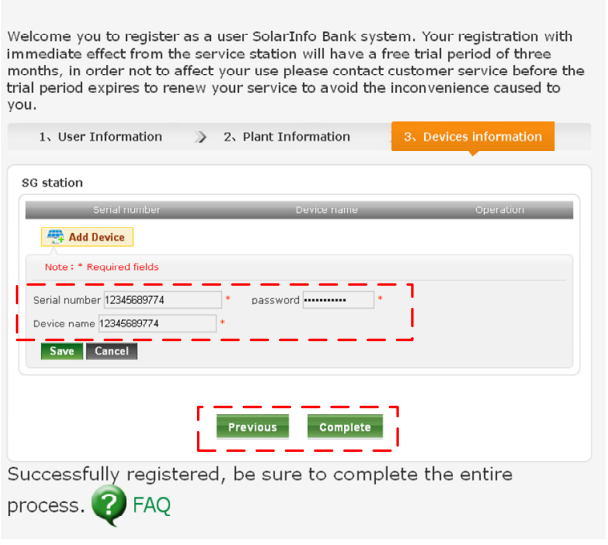
4. Enter the Plant Information interface. Click Complete to finish the registration and click Previous to return to the precious page to modify information. If the Home users is selected in step 2, the registration process is finished by now.


Welcome you to register as a user SolarInfo Bank system. Your registration with immediate effect from the service station will have a free trial period of three months, in order not to affect your use please contact customer service before the trial period expires to renew your service to avoid the inconvenience caused to you.
1、User Information
2、Plant Information
Note：* Required fields
Name SG station * Design Power 6 * kWp
Time Zone (GMT) Casablanca, Dublin, Edinburgh, London,
Expansion
Add Device
Note：* Required fields
Serial number 123456789456 * password ********** *
Device name 123456789456 *
Previous
Complete
Successfully registered, be sure to complete the entire process.
FAQ

- Time Zone must be selected according to the installation place of the inverter. If user does not know the local time zone, please check in Google Map.
- If new devices are added, please fill in the pertinent information in the following format:
  - **Serial number**: the serial number shown on the device nameplate.
  - **Password**: the same as the serial number and should be input manually.
  - **Device name**: same as the device serial number by default and can be changed by the user.



5. Proceed as follows to fill in the Device Information if the Business users is selected in step 2.


Welcome you to register as a user SolarInfo Bank system. Your registration with immediate effect from the service station will have a free trial period of three months, in order not to affect your use please contact customer service before the trial period expires to renew your service to avoid the inconvenience caused to you.
1、User Information
2、Plant Information
3、Devices information
SG station
Serial number
Device name
Operation
Add Device
Note：* Required fields
Serial number 12345689774 * password ********** *
Device name 12345689774 *
Save
Cancel
Previous
Complete
Successfully registered, be sure to complete the entire process.
FAQ

The format of Serial number, Password, and Device name are the same as that in Step 4. Click Complete to finish the registration and click Previous to return to the precious page to modify information.

6. Refreash the webpage www.solarinfobank.com, then you can see the data of the corresponding PV plant.

7 Appendix

Technical Data

Parameters	SG8KTL-EC	SG10KTL-EC	SG12KTL-EC
Input Side Data			
Max. PV input power	8440 W	10550 W	12650 W
Max. PV input voltage	1000 V		
Startup voltage	250 V		
Nominal input voltage	610 V		
MPP voltage range	200...900 V		
MPP voltage range for nominal power	320...800 V	320...800 V	350...800 V
No. of MPPTs	2		
Max. number of PV strings per MPPT (DC1/DC2)	3/1		
Max. PV input current (DC1/DC2)	33 A(22 A/11 A)	33 A(22 A/11 A)	36 A(24 A/12 A)
Max. current for input connector	12 A		
Short-circuit current of PV input (DC1/DC2)	42 A(28 A/14 A)	42 A(28 A/14 A)	45 A(30 A/15 A)
Output Side Data			
Nominal AC output power	8000 W	10000 W	12000 W
Max. AC output apparent power	8000 VA	10526 VA	13300 VA
Max. AC output current	11.6 A	15.3 A	19.3 A
Nominal AC voltage	3/N/PE, 230/400 Vac		
AC voltage range	310...450 Vac (May vary as per corresponding country's grid standard)		
Nominal grid frequency	50 Hz		
Grid frequency range	45...55 Hz (May vary as per corresponding country's grid standard)		
THD	<3% (Nominal power)		
Power factor	>0.99 @default value at nominal power, (adj. 0.8 overexcited to 0.8 underexcited)		
DC current injection	<0.5% In		

Parameters	SG8KTL-EC	SG10KTL-EC	SG12KTL-EC
Protection			
Anti-islanding protection	Yes		
DC reverse connection protection	Yes		
AC short circuit protection	Yes		
Leakage current protection	Yes		
DC switch	Integrated		
DC fuse	No		
Overvoltage protection	III		
System			
Max. efficiency	98.0%	98.0%	98.0%
Max. European efficiency	97.5%	97.6%	97.5%
Isolation method	Transformerless		
Ingress protection rating	IP65		
Night power consumption	<1 W		
Operating ambient temperature range	-25℃...60℃(> 45℃ derating)		
Allowable relative humidity range	0...95%, non-condensing		
Cooling method	Natural cooling		
Noise	≤29 dB	≤29 dB	≤35 dB
Max. operating altitude	2000 m		
Display	Graphic LCD		
Communication	2×Ethernet, 2×RS485(RJ45 connector), 4×Digital Inputs, 2×Digital Outputs		
DC connection type	MC4		
AC connection type	Plug and play connector		
Certification	VDE0126-1-1, EN62109-1, EN62109-2, G83/1, VDE-AR-N-4105, CEI 0-21		VDE0126-1-1, EN62109-1, EN62109-2, G59/2, VDE-AR-N-4105, CEI 0-21
Mechanical Data			
Dimensions(W×H×D)	535 mm×710 mm×220 mm		
Mounting method	Wall bracket		
Weight	36 kg	36 kg	45 kg

SUNGROW

Green and Effective

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Specifications are subject to changes without advance notice.